

REMARKS/ARGUMENTS

Claims 1-44 are pending in this application. Claims 7-8, 14, 21-22 and 30-39 have been withdrawn from consideration.

The examiner rejected Claims 1-5, 6, 9-10, 16-19, and 23-25 under 35 U.S.C. 103(a) as being unpatentable over Imamura et al (Imamura) USPAT 6,563,993 B1. This rejection is respectfully traversed.

Independent Claims 1, 17 and 23

Applicants have amended independent Claims 1, 17 and 23 to recite *inter alia* that:

- b) a plurality of light-extraction devices in an arrangement including being spaced along a longitudinal dimension of an active section of the light pipe for emission of side light . . . ;
- c) the light-extraction devices extending, with respect to the longitudinal axis, radially beyond an outer surface of the fluoropolymer cladding.

Imamura fails to teach or suggest various aspects of the foregoing features. For instance, Imamura fails to teach light-extraction devices "being spaced along a longitudinal dimension of an active section of the light pipe." Rather, Imamura teaches "a plurality of light diffusive and reflective films . . . provided in parallel along the longitudinal axis of the clad." Col. 5, lines 57-61. This is a different arrangement from that claimed.

Additionally, Imamura fails to teach or suggest light-extraction devices "extending, with respect to a longitudinal axis of the light pipe, radially beyond an outer surface of the fluoropolymer cladding." Imamura does refer to forming his film in "a band-like shape having a protrusion part" (Col. 5, lines 53-57). However, his sole example and teaching of a protrusion relates to a "reflective film . . . being protruded into the inner portion of the core from the inner periphery surface of the clad as shown in FIG. 3" (Col. 6, lines 45-48). As such, a person of ordinary skill in the art would understand Imamura's protrusion to radically differ from Applicants' claimed geometry of their devices.

Therefore, Claims 1, 17 and 23 patentably distinguish over Imamura in multiple respects.

Claims 17 and 23 additionally distinguish over Imamura by reciting the devices

"being spaced along the length of the light pipe with a density that increases sequentially along the length of the light pipe the further the distance along the light pipe from a light source." As the specification teaches, such arrangement of density can "achieve uniform side-light emission" (page 5, line 26; page 6, lines 31-33). ("Uniform" side-light emission is defined at page 5, lines 29-31.)

The examiner suggests that a person of ordinary skill in the art would find the subject differential density feature of the invention to be routine so as to place light "where one wants light to be". Office Action at 5. However, Imamura fails to provide any reasonable assurance that uniform side-light emission—as taught by the present specification—can be obtained from following the differential density feature and especially from using the presently claimed devices. Therefore, a person of ordinary skill in the art would find the claimed differential density subject matter concerning the presently claimed unique "devices" to be non-routine; that is, non-obvious.

Dependent Claims 2-5, 6, 9-10, 16, 19 and 24-25

The claims depending from independent Claims 1, 17 and 23—i.e., Claims 2-5, 6, 9-10, 16, 19 and 24-25—distinguish with even more force than their base claims over the prior art.

New Claims 40-44 further define over the prior art by reciting the feature of light-extraction "occur[ing] mainly through refraction of light at an interface between the light-carrying portion and the devices, other than by refraction through any light-scattering particles in the devices." The foregoing claims are discussed in the Applicants' specification, specifically page 6 lines 16 through 18. These claims further distinguish over the "light diffusive and reflective film" of Imamura, whose "fine powder particles having a refractive index greater than that of the core-forming resin" (Col. 6, lines 51-54) constitute the principle (or exclusive) means of light extraction from his light fiber.

Further, dependent Claims 42-44 recite the feature of the "devices hav[ing] a substantially flat surface facing radially away from the light pipe." This distinguishes from Imamura's light diffusive and reflective film shown at 1 in Figs. 1-3, which lacks the foregoing feature.

Applicants acknowledge the examiner's finding allowable subject matter in Claims 11-13 and 27-29. However, these claims have not been rewritten with base claims in independent form, etc. This is because the present amendments show the

current base claims to be patentable.

Consideration of generic claims under 37 CFR § 1.141 (a)

In view of the allowability of Claims 1, 17 and 23, Applicants request examination of all subspecies claims under Species A (drawn to embodiments of Figs. 1-5b) that were not examined in this application. Such subspecies claims, falling under generic Claims 1, 17 and 23, are Claims 7-8, 14-15, 21-22 and 30. By virtue of incorporating all the elements of their allowable base claims, the foregoing claims should be allowed.

Further, by virtue of defining further features of the invention not taught or suggested by the prior art, these claims patentably distinguish over the prior art with even more force than their base claims. For instance, currently withdrawn Claim 7 states, "each device increase[ing] in cross sectional area from inlet to outlet in such manner as to reduce the angle of light passing through the device." This feature is nowhere taught or suggested by Imamura.

Accordingly, the currently withdrawn Claims 7-8, 14, 21-22 and 30-39 should be allowed.

The references cited but not applied by the examiner have been considered. However, they do not appear to detract from the patentability of the present claims.

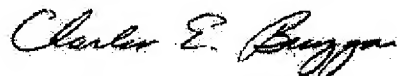
Conclusion

In view of the above, allowance of pending Claims 1-6, 9-13, 15-20, 23-29 and 40-44 is requested.

I certify that the foregoing document and any document(s) referenced below are being filed electronically with the USPTO using the private PAIR system on the date stated below.

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Respectfully submitted,



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